

WHAT IS CLAIMED IS:

1. A fixing device comprising:

a substantially cylindrical heat roller which is used to fix toner on a paper sheet;

5 a center heater which is placed, inside the heat roller, in a position shifted in a first direction from a central position in a diameter direction of the heat roller, in a center region in a longitudinal direction of the heat roller;

10 side heaters which are placed, inside the heat roller, in positions shifted in a second direction from the central position in the diameter direction of the heat roller, in side regions in the longitudinal direction of the heat roller;

15 a first power shutoff unit which is installed in a position corresponding to the center heater in the longitudinal direction of the heat roller, on a heat roller surface where distances to the center heater and side heater are equal in the diameter direction of
20 the heat roller, and which shuts off power supply to the center heater and side heaters when a surface temperature of the heat roller in the installation position has reached a predetermined operating temperature; and

25 a second power shutoff unit which is installed in a position corresponding to one of the side heaters in the longitudinal direction of the heat roller, on

a heat roller surface where distances to the center heater and side heater are equal in the diameter direction of the heat roller, and which shuts off power supply to the center heater and side heaters when
5 a surface temperature of the heat roller in the installation position has reached the same operating temperature as the first thermostat.

2. A fixing device according to claim 1, wherein the first power shutoff unit and second power shutoff
10 unit comprise thermostats having the same operating characteristics.

3. A fixing device according to claim 1, which further comprises a first thermistor which detects the surface temperature of the heat roller in the center
15 region in the longitudinal direction of the heat roller, a second thermistor which detects the surface temperature of the heat roller in the side region in the longitudinal direction of the heat roller, and a controller which controls power supply to the center
20 heater and side heaters such that the surface temperature, detected by the first thermistor, of the center region in the longitudinal direction of the heat roller and the surface temperature, detected by the second thermistor, of the side region in the
25 longitudinal direction of the heat roller are maintained at a fixing control temperature, and

in which the operating temperature of the first

power shutoff unit and second power shutoff unit is
a temperature for protecting a predetermined device.

4. A fixing device according to claim 3, wherein
the first power shutoff unit and second power shutoff
5 unit comprise thermostats having the same operating
characteristics.

5. A fixing device according to claim 3, further
comprising:

a comparator which compares the temperature
10 detected by the first thermistor or second thermistor
with a first protection control temperature higher than
the fixing control temperature and lower than the
device protection temperature of the first thermistor
and second thermistor; and

15 a reset circuit which turns off a power supply of
the fixing device on the basis of a signal output from
the comparator and indicating that the temperature
detected by the first thermistor or second thermistor
is not less than the first protection control
20 temperature,

wherein the controller further compares the
temperature detected by the first thermistor or second
thermistor with a second protection control temperature
higher than the control temperature and lower than the
25 device protection temperature of the first thermistor
and second thermistor, and controls the reset circuit
to turn off the power supply of the fixing device if

the temperature detected by the first thermistor or second thermistor is not less than the second protection control temperature.

5 6. A fixing device according to claim 5, wherein the first power shutoff unit and second power shutoff unit comprise thermostats having the same operating characteristics.

 7. An image forming apparatus for forming an image on a paper sheet, comprising:

10 a toner image formation unit which forms a toner image on the paper sheet;

 a substantially cylindrical heat roller which is used to fix the toner image, formed on the paper sheet by the toner image formation unit, on the paper sheet;

15 a center heater which is placed, inside the heat roller, in a position shifted in a first direction from a central position in a diameter direction of the heat roller, in a center region in a longitudinal direction of the heat roller;

20 side heaters which are placed, inside the heat roller, in positions shifted in a second direction from the central position in the diameter direction of the heat roller, in side regions in the longitudinal direction of the heat roller;

25 a first power shutoff unit which is installed in a position corresponding to the center heater in the longitudinal direction of the heat roller, on a heat

roller surface where distances to the center heater and side heater are equal in the diameter direction of the heat roller, and which shuts off power supply to the center heater and side heaters when a surface
5 temperature of the heat roller in the installation position has reached a predetermined operating temperature; and

a second power shutoff unit which is installed in a position corresponding to one of the side heaters in
10 the longitudinal direction of the heat roller, on a heat roller surface where distances to the center heater and side heater are equal in the diameter direction of the heat roller, and which shuts off power supply to the center heater and side heaters when a
15 surface temperature of the heat roller in the installation position has reached the same operating temperature as the first thermostat.